

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)

2. (Currently Amended) ~~[[The]]~~ A high pressure pump according to Claim 1 characterized in that comprising a housing and a cylinder in said housing wherein a shaft-like plunger makes a reciprocating motion in a bore formed in said cylinder to compress a fluid fuel; said high pressure pump, wherein

one end of said plunger is connected to a compression chamber for compressing the fluid fuel, while the other end is connected to a reciprocating motion drive source through a member; wherein a transverse aperture is connected with the bore through a cylindrical groove provided between axially opposite ends of the bore of said cylinder; and the clearance between said bore and said plunger depends on where said plunger relative to said bore, wherein $G_a \leq G_b < G_c$ or $G_a < G_b \leq G_c$ and, wherein:

G_a denotes a clearing between the bore on the portion from said compression chamber to said cylindrical groove and said plunger;

Gb a clearance closer to the cylindrical groove, out of the clearances between the bore from said cylindrical groove to the drive source side and said plunger; and

Gc a clearance closer to the drive source side, out of the clearances between the bore from said cylindrical groove to the drive source side and said plunger.

3. (Currently Amended) ~~[[The]]~~ A high pressure pump according to Claim 2-characterized in that comprising a housing and a cylinder in said housing wherein a shaft-like plunger makes a reciprocating motion in a bore formed in said cylinder to compress a fluid fuel; said high pressure pump, wherein one end of said plunger is connected to a compression chamber for compressing the fluid fuel, while the other end is connected to a reciprocating motion drive source through a member; wherein a transverse aperture is connected with the bore through a cylindrical groove provided between axially opposite ends of the bore of said cylinder; and the clearance between said bore and said plunger depends on where said plunger relative to said bore, wherein $D_a \leq D_b < D_c$ or $D_a < D_b \leq D_c$ and wherein:

Da denotes an inner diameter of the bore on the portion from said compression chamber to said cylindrical groove;

Db an inner diameter closer to the cylindrical groove, out of the inner diameters of the bore from said cylindrical groove to the drive source side; and

Dc an inner diameter closer to the drive source side, out of the inner diameters of the bores of the cylinder from said cylindrical groove to the drive source side.

4. (Currently Amended) The high pressure pump according to Claim 2 ~~characterized in that~~ , wherein $Gc \leq ((La + W + Lbc)/La) \times Ga$ or $Dc \leq ((La + W + Lbc)/La) \times Da$ wherein:

La is the width of said cylinder bore in the axial direction on the portion from the compression chamber to the cylindrical groove;

W the width of said cylindrical groove in the axial direction; and

Lbc the width of the portion from the cylindrical groove to the drive source side.

5. (Currently Amended) The high pressure pump according to Claim 3 ~~characterized in that~~ , wherein $Gc \leq ((La + W + Lbc)/La) \times Ga$ or $Dc \leq ((La + W + Lbc)/La) \times Da$ wherein:

La is the width of said cylinder bore in the axial direction on the portion from the compression chamber to the cylindrical groove;

W the width of said cylindrical groove in the axial direction; and

Lbc the width of the portion from the cylindrical groove to the drive source side

6. (Currently Amended) ~~[[A]] The high pressure pump comprising a housing and a cylinder in said housing wherein a shaft-like plunger makes a reciprocating motion in the bore formed in said cylinder to compress a fluid; said high pressure pump characterized in that one end of said plunger is connected to a compression chamber, while the other end is connected to a reciprocating motion drive source through a member; wherein a transverse aperture is connected with the bore through a cylindrical groove provided halfway through the cross section of the bore of said cylindrical groove in the axial direction; the~~ according to Claim 2, wherein longitudinal section of said cylindrical groove exhibits a form gradually widening widens toward the bore of said cylinder, and the angle formed at the portion where said cylindrical groove contacts the bore is 5 degrees or more, but not more than 25 degrees with respect to axial direction of the bore.

7. (Currently Amended) The high pressure pump according to Claim 6 ~~characterized in that~~ wherein the width W of said cylindrical groove in the axial direction is $D \times 0.1$ or more, but not more than $D \times 0.6$ with respect to the inner diameter D of the bore.

8.-11. (Canceled)

12. (New) The high pressure pump according to claim 2, wherein a longitudinal section of said cylindrical groove gradually widens towards the bore of said cylinder, and the angle formed at the portion where said cylindrical groove contacts the bore is 5 to 25 degrees with respect to an axial direction of the bore.

13. (New) The high pressure pump according to claim 3, wherein a longitudinal section of said cylindrical groove gradually widens towards the bore of said cylinder, and the angle formed at the portion where said cylindrical groove contacts the bore is 5 to 25 degrees with respect to an axial direction of the bore.

14. (New) The high pressure pump according to claim 3, wherein the width W of said cylindrical groove in the axial direction is a bore inner diameter D of 0.1 to 0.6.

15. (New) The high pressure pump according to claim 3, wherein $G_a \leq G_b < G_c$ or $G_a < G_b \leq G_c$, wherein G_a denotes a clearance between the bore on the portion from said compression chamber to said cylindrical groove and said plunger.

16. (New) The high pressure pump according to claim 6, wherein $G_a \leq G_b < G_c$ or $G_a < G_b \leq G_c$, wherein G_a denotes a clearance between the bore on the portion from said compression chamber to said cylindrical groove and said plunger.